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greater as the point X is assumed nearer to the point A, (Eu. I. 16.) : it is an evident consequence, that between those angles, one of 90 degrees at the point P, and the other of 92 degrees in the point A, one angle BXA is found, which is 91 degrees, truly equal to the given angle R. None the less, omitting this last observation about the obtuse angle, it is necessary most diligently to take care that the difficulty of this proposition [axiom] of Euclid be fixed in this, that it asserts the meeting of two straights; especially in that part in which they make with the cutting straight two angles less than two right angles; and assuredly that it asserts the aforesaid meeting thus, *of whatever length be the assigned transversal.*

For otherwise (as I have already mentioned in the preceding scholion) I will demonstrate that general meeting solely from the admitted meeting of this sort, when one of the angles is right; and indeed, even if it be admitted not for any assignable finite transversal, but alone admitted within the limits of any assigned very small transversal.

[To be continued.]

ARITHMETIC.

Conducted by B. F. FINKEL, Kidder, Mo. All contributions to this department should be sent to him.

SOLUTIONS OF PROBLEMS.

36. **Proposed by F. P. MATZ, M. Sc., Ph. D., Professor of Mathematics and Astronomy in New Windsor College, New Windsor, Maryland.**

It costs $C=\$22$ to paper a room $a=18$ feet long, $b=15$ feet wide, and $c=10$ feet high, with paper (m/n)th, $=\frac{3}{4}$, of a yard wide. Find the price of the paper per roll of $R=12$ linear yards.

Solution by the PROPOSER.

Making no allowance for "matching", the number of linear yards of paper required is $Y=\frac{1}{3}[2(a+b)c+ab](n/m),=413\frac{1}{3}$; and, consequently, the number of rolls of paper required is $N=Y/R=34\frac{4}{9}$.

Hence the price of the paper per roll is

$$P=\frac{3(m/n)R}{2(a+b)c+ab} \text{ of } \$C,=\$\tfrac{99}{155}=63\tfrac{7}{8} \text{ cents.}$$

Professor J. F. W. Scheffer, P. S. Berg, and J. A. Calderhead get \$2.70 as the result. Professor John Faught and I. L. Beverage get \$1.91$\frac{13}{31}$, and Professor T. W. Palmer gets \$178$\frac{22}{31}$. These different results are due to different interpretations of the problem.